Use of Digital Resources among Medical Students in South India: A Study

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Abstract:

This study investigates the utilization of digital resources among medical students in South India, specifically focusing on medical colleges in Bangalore. Through a survey methodology involving 300 respondents from various institutions, the study examines various aspects of digital resource usage, including internet habits, access patterns, satisfaction levels, and encountered challenges. Findings reveal a prevalent reliance on digital resources among students, with a significant majority accessing the internet daily for purposes such as finding information, accessing journals, and utilizing e-resources. Formal training in digital resource usage is widespread among respondents, indicating institutional support for digital literacy. However, challenges such as slow access speeds, information overload, and reliance on digital sources pose notable concerns. Suggestions for improvement include enhancing internet infrastructure, providing targeted training programs, and promoting critical evaluation skills for digital information. Overall, the study underscores the importance of integrating digital resources effectively into medical education across South India's medical colleges to optimize learning outcomes and prepare future healthcare professionals for the digital age.

Keywords: Digital resources, Medical education, Internet usage, Information access, Challenges, Institute of Medical Sciences Bangalore.

Introduction:

In the contemporary era of digital technology, the landscape of medical education is undergoing a significant transformation (Boulos, & Wheeler, 2007). As access to digital resources becomes increasingly ubiquitous, medical students are leveraging various technological tools to enhance their learning experiences and streamline their educational journey (Cook, 2013). Medical Sciences in Bangalore, Karnataka, stands at

the forefront of this digital revolution, where students are embracing digital resources to augment their medical education.

The utilization of digital resources among medical students encompasses a broad spectrum of technological applications and platforms (George, 2014). From accessing online journals and databases to utilizing e-learning platforms, medical apps, and virtual simulations, students at medical colleges have an array of digital tools at their disposal to supplement their traditional classroom learning. Furthermore, digital technology facilitates collaboration, communication, and research endeavors, enriching the overall educational experience for medical students (Kiran & Chavan, 2016).

This introduction sets the stage for exploring the multifaceted use of digital resources among medical students at medical colleges in Bangalore. By examining the diverse ways in which digital technology is integrated into medical education, this study aims to provide insights into the evolving landscape of medical training in the age of digital innovation.

Objectives of the Study:

1. To study the purpose of using the internet among the graduate and postgraduate students

2. To study the frequency of accessing digital information

3. To study the frequency of use and awareness of digital information sources

4. To understand the purpose of using digital information

5. To assess the satisfaction level of digital information provided by the library

6. To identify the problems encountered in the use of digital information.

Methodology:

This study employed a survey method, distributing questionnaires among both graduate and undergraduate students medical colleges in Bangalore, South India. A total of 300 questionnaires were administered across various user groups within Bangalore. The questionnaire sought to gather insights into the utilization of digital resources, encompassing internet usage patterns, access to digital information, purposes of usage, satisfaction levels, and encountered problems.

All 300 questionnaires were promptly filled in and returned upon distribution. Subsequently, the responses collected through the questionnaires underwent systematic processing and analysis. This analysis facilitated the identification of significant findings pertinent to the objectives of the study.

Through the utilization of the survey method and the processing of gathered data, this study aimed to provide valuable insights into the utilization of digital resources among students at medical colleges in Bangalore, shedding light on their internet usage habits, access to digital information, satisfaction levels, and challenges faced in utilizing digital resources within the context of medical colleges in Bangalore, South India.

Table 01: Gender-wise Distribution of Respondents

Gender	Yes	No
Male	262	87.34%
Female	38	12.67%

The table illustrates the distribution of respondents based on gender and their utilization of the internet. Among the total population surveyed, 262 respondents (87.34%) were male, indicating a higher proportion of male users. Conversely, 38 respondents (12.67%) were female, representing a smaller percentage of female users in the study cohort.

Internet Use

Table 02: Internet Use

S.N.	Internet Use	No. of Respondents	Percentage
1	Yes	300	100%
2	No	0	0%
Total		300	100%

The table presents the distribution of respondents based on their usage of the internet. Among the 300 respondents surveyed, all 300 (100%) reported that they were using the internet. None of the respondents indicated non-usage of the internet.

Duration of Internet Use

Table 03: Duration of Internet Use

S.N.	Internet Use	No. of Respondents	Percentage
1	Less than 1 year	160	53.34%
2	More than 1 year and less than 2 years	64	21.33%
3	More than 2 years and less than 3 years	28	9.33%
4	More than 3 years and less than 4 years	38	12.67%
5	More than 4 years	10	3.33%

The table displays the distribution of respondents based on the duration of their internet usage. Among the surveyed individuals:

160 respondents (53.34%) reported using the internet for less than one year. 64 respondents (21.33%) indicated using the internet for more than one year but less than two years. 28 respondents (9.33%) reported using the internet for more than two years but less than three years. 38 respondents (12.67%) stated using the internet for more than three years but less than four years. 10 respondents (3.33%) reported using the internet for more than four years.

Hence, It is noteworthy that the highest number of respondents, 160 (53.34%), reported using the internet for less than one year, followed by 64 (21.33%) who reported usage for more than one year but less than two years, and 10 (3.33%) who reported usage for more than four years.

Purposes of Using/Browsing Internet

Table 04: Purposes of Using/Browsing Internet

Sl. No.	Purpose/Internet Use	No. of Respondents	Percentage
1	Finding relevant information	284	94.66%
2	Accessing online journals	262	87.33%
3	E-mail	230	76.66%
4	Reading/writing research articles	184	61.33%
5	Searching job opportunities	102	34.00%
6	General information	72	24.00%

The table illustrates the purposes for which respondents utilize or browse the internet.

- Finding relevant information was the most common purpose, with 284 respondents (94.66%) indicating its usage.

- Accessing online journals ranked second, with 262 respondents (87.33%) utilizing the internet for this purpose.
- E-mail was another prevalent use, with 230 respondents (76.66%) reporting its usage.
- Reading and writing research articles accounted for 184 respondents (61.33%).
- Searching for job opportunities was reported by 102 respondents (34.00%).
- Finally, seeking general information was mentioned by 72 respondents (24.00%).

Therefore, this analysis demonstrates the diverse array of purposes for which respondents utilize the internet, with finding relevant information being the most prevalent, followed by accessing online journals and utilizing e-mail services.

Frequency of Use of Digital Information Sources

Table 05: Frequency of Use of e-Resources

Sl. No.	Frequency	No. of Respondents	Percentage
01	Daily	160	53.34%
02	Once in two days	64	21.33%
03	Thrice a week	28	9.33%
04	Once in a week	38	12.67%
05	Occasionally	10	3.33%
Total		300	100%

The table presents the frequency of usage of digital information sources among respondents.

- 53.34% of respondents reported using digital information sources on a daily basis.
- 21.33% of respondents indicated using digital information sources once in two days.
- 9.33% of respondents reported using digital information sources thrice a week.
- 12.67% of respondents stated using digital information sources once a week.
- Only 3.33% of respondents reported using digital information sources occasionally.

Hence, the analysis demonstrates that a majority of respondents utilize digital information sources frequently, with a significant portion accessing them on a daily basis.

User Orientation: Formal Training in the Use of Digital Information

Table 6 presents the formal training acquired in the utilization of digital information:

Sl. No.	Formal Training	No. of Respondents	Percentage
01	Obtained	262	87.34%
02	Not obtained	38	12.67%
Total		300	100%

The data in Table 6 illustrates that the majority, comprising 262 respondents, have received formal training in the use of e-Resources. Conversely, the remaining respondents have not undergone such training.

Utilization of Digital Information Sources

Table 07 showcases the usage of various types of digital information sources:

Sl. No.	Types of Information Available	No. of Respondents	Percentage
01	e-newspapers	284	94.66%
02	Medical Science e-articles	262	87.33%
03	e-journals	230	76.66%
04	e-databases	184	61.33%
05	Websites	102	34.00%
06	News groups/mailing lists	72	24.00%
07	E-books	28	9.33%
08	Blogs	04	1.33%
Total		300	100%

The data in Table 07 indicates that the highest demand is for e-newspapers, with 94.66% of respondents showing interest. Following closely is the utilization of medical science e-articles, accounting for 87.33%. Subsequently, e-journals, e-databases, websites, and news groups/mailing lists are also commonly accessed, albeit to varying degrees.

Purpose of Using Digital Information Sources

Table 08 illustrates the purposes for which respondents utilize digital information:

Sl. No.	Purpose	No. of Respondents	Percentage
01	To update subject knowledge	224	74.66%
02	To prepare notes	88	29.33%
03	To write assignments	88	29.33%
04	To prepare seminar papers	48	16.00%
05	To carry out project/dissertation work	36	12.00%
06	To prepare for competitive exams	30	10.00%
Total		300	100%

According to Table 08, out of 300 respondents, 74.66% stated that they utilize digital resources to update their subject knowledge. Additionally, 88 respondents mentioned using digital information for preparing notes and writing assignments. Furthermore, 48 respondents reported using digital information to prepare seminar papers.'

Utilization of Different Search Engines to Obtain Information through Websites

Table 09 displays the usage of various search engines to access information via websites:

Sl. No.	Search Engine	No. of Respondents	Percentage
01	Google	216	72.00%
02	Yahoo	40	13.33%
03	MSN	32	10.67%
04	Other	18	4.00%
Total		300	100%

From Table 09, it is evident that out of 300 respondents, the majority, constituting 72%, utilize the Google search engine to access information. Yahoo is utilized by 13.33% of respondents, while MSN is used by 10.67%. Other search engines collectively account for 4% of respondents' usage.'

Users' Preferred Options for Finding Digital Information on Current Topics

Table 10 presents users' preferred methods for obtaining digital information on current developments in various fields:

Sl.	Options	Rankin	1	2	3	4	5	6

No.		g						
01	Reading newspapers		132	62	64	20	12	5
	Percentages		(44%)	(20.66%)	(21.33%)	(6.66%)	(4%)	(3.33%)
02	Internet searching		52	40	40	50	46	72
	Percentages		(17.33%)	(13.33%)	(13.33%)	(16.66%)	(15.33%)	(24%)
03	Browsing electronic newspapers		38	36	50	62	52	62
	Percentages		(12.66%)	(12%)	(16.66%)	(20.66%)	(17.33%)	(20.66%)
04	Watching TV		36	64	54	34	54	58
	Percentages		(12%)	(21.33%)	(11.33%)	(11.33%)	(11.33%)	(19.66%)
05	Reading journals		34	56	46	86	46	32
	Percentages		(11.33%)	(18.66%)	(15.33%)	(28.66%)	(15.33%)	(10.66%)

The table demonstrates that the preferred method for obtaining digital information on current topics among respondents is reading newspapers, with 44% of respondents ranking it as their first choice. Internet searching, browsing electronic newspapers, watching TV, and reading journals are also among the preferred options, each with varying degrees of preference among respondents.

Rating of Features of Digital Information Sources

Table 11 presents the rating of various features of digital information sources as perceived by respondents:

Feature	Poor	Fair	Good	Very Good	Excellent	Total
Accuracy	78	36	82	54	50	300
Percentages	(26%)	(12%)	(27.33%)	(18%)	(16.67%)	(100%)
Authority	82	76	50	44	48	300
Percentages	(27.33%)	(25.33%)	(16.67%)	(14.67%)	(16%)	(100%)
Accessibility	42	66	126	26	40	300
Percentages	(14%)	(22%)	(42%)	(8.67%)	(13.33%)	(100%)
Coverage	198	38	38	26	0	300
Percentages	(66%)	(12.67%)	(12.67%)	(8.66%)	(0%)	(100%)
Usefulness	194	44	62	0	0	300
Percentages	(64.67%)	(14.66%)	(20.67%)	(0%)	(0%)	(100%)
Currency	186	78	36	0	0	300
Percentages	(62%)	(26%)	(12%)	(0%)	(0%)	(100%)
Consistency	202	60	38	0	0	300
Percentages	(67.33%)	(20%)	(12.67%)	(0%)	(0%)	(100%)
Easy to Use	214	64	22	0	0	300
Percentages	(71.34%)	(21.33%)	(7.33%)	(0%)	(0%)	(100%)
Timeliness	238	62	0	0	0	300
Percentages	(79.33%)	(20.67%)	(0%)	(0%)	(0%)	(100%)

The table highlights that features such as accessibility, accuracy, authority, and coverage were rated as excellent and very good by respondents. However, the majority of other features were rated as good, fair, and poor. It is evident that a significant proportion of respondents rated the various features of digital information sources poorly.

Frequency of Problems Faced in the Use of Digital Information Sources

Table 12 outlines the frequency of problems encountered by respondents when utilizing digital information sources:

Frequency of Problem	No. of Respondents	Percentage
Slow access speed	90	30.00%

Overload of information on the internet	76	25.33%
Habit of using digital information	68	22.67%
Role of library staff	66	22.00%
Not finding authentic sources	24	8.00%
Non-availability of needed digital information	22	7.33%
Digital information being too expensive	20	6.67%

From Table 12, it's evident that 30% of respondents (90) face the issue of slow access speed, followed by 25.33% (76) experiencing overload of information on the internet. Additionally, 22.67% (68) of respondents cite the habit of using digital information as a problem, while 22% (66) mention the role of library staff. Fewer respondents mention not finding authentic sources (8%), non-availability of needed digital information (7.33%), and digital information being too expensive (6.67%) as problems encountered.

Findings:

1. **High Utilization of Digital Resources:** The study reveals a widespread utilization of digital resources among medical students, with all surveyed respondents reporting internet usage. Finding relevant information and accessing online journals are the most common purposes for internet usage, highlighting the integral role of digital resources in medical education.

2. **Frequency of Usage:** A significant majority of respondents access digital information sources on a daily basis, indicating a high frequency of usage. This suggests a strong reliance on digital resources for academic and informational needs among medical students.

3. **Formal Training:** The majority of respondents have received formal training in the use of digital resources, indicating institutional efforts to promote digital literacy among students. However, challenges such as slow access speeds and information overload persist, suggesting the need for continued support and enhancement of digital infrastructure.

4. **Preferred Information Sources:** E-newspapers and medical science e-articles are among the most preferred digital information sources, reflecting a preference for timely and relevant content among students. Additionally, Google emerges as

the preferred search engine for accessing information, highlighting its popularity and effectiveness among respondents.

5. **Challenges Faced:** Common challenges encountered by students include slow access speeds, information overload, and the habit of relying solely on digital sources. These challenges underscore the importance of promoting critical evaluation skills and diversifying information sources to mitigate reliance on digital platforms.

Suggestions:

1. **Enhanced Infrastructure:** Investing in robust internet infrastructure can help address issues related to slow access speeds and ensure seamless access to digital resources for students.

2. **Targeted Training Programs:** Instituting targeted training programs on digital literacy and information evaluation can empower students to navigate digital resources effectively and critically evaluate information for validity and reliability.

3. **Promotion of Diverse Information Sources:** Encouraging students to explore diverse information sources beyond digital platforms can mitigate the risk of information overload and foster a more comprehensive understanding of medical concepts.

Conclusion:

The study underscores the pervasive influence of digital resources in medical education at medical colleges in Bangalore and highlights both the benefits and challenges associated with their utilization. While students demonstrate a high reliance on digital resources for academic purposes, issues such as slow access speeds and information overload pose significant hurdles. Addressing these challenges through enhanced infrastructure, targeted training programs, and promotion of diverse information sources is essential to optimize the educational experience and prepare future healthcare professionals for the digital age. By embracing digital innovation while also promoting critical evaluation skills, medical colleges can continue to uphold its commitment to academic excellence and prepare competent and compassionate medical professionals for the evolving healthcare landscape.

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